

Cardiovascular Disease among Persons with Diabetes

According to the Centers for Disease Control and Prevention (CDC), cardiovascular disease (CVD) is the leading cause of death in the United States and in Virginia. Coronary artery disease, a type of cardiovascular disease in which plaque builds up and blocks arteries, can cause heart attacks.

Doctors recommend lifestyle changes, such as eating a healthier diet, exercising, and not smoking to reduce risk from coronary artery disease. Doctors may recommend medications to control risk factors such as high cholesterol and high blood pressure.

Risk factors for cardiovascular disease can be hereditary, behavioral, or related to another condition. Behaviors that increase risk for cardiovascular disease include

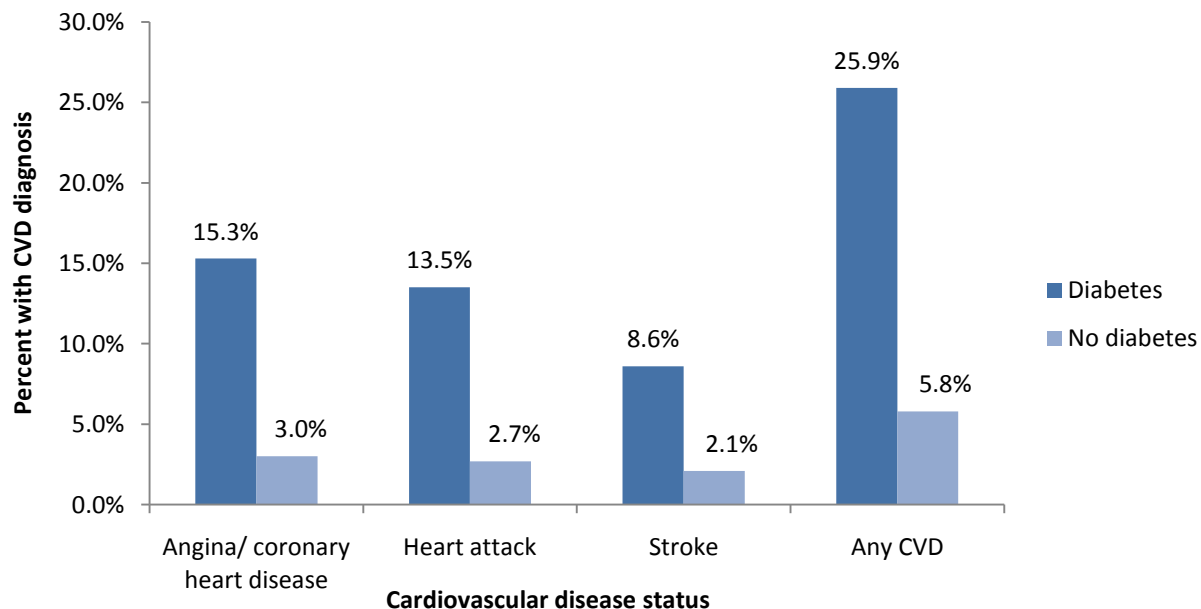
- Tobacco use;
- Diet high in saturated fat, cholesterol, or salt/sodium;
- Overweight or obesity; and
- Physical inactivity.

Other related conditions that increase risk for cardiovascular disease include

- High cholesterol,
- High blood pressure, and
- Diabetes.

In 2010, cardiovascular disease prevalence was significantly higher among persons with diabetes than among persons without diabetes. Persons with diabetes were more likely to report having been diagnosed with angina or coronary artery disease, heart attack, or a stroke.

Cardiovascular disease prevalence by diabetes status among adults, Virginia, 2010



Source: Behavioral Risk Factor Surveillance System (BRFSS), 2010.

Data note: Percents are weighted based on demographic and household characteristics.

Sources: Virginia BRFSS, 2010; CDC, <http://www.cdc.gov/heartdisease/>. Data note: Cardiovascular disease is self-reported on the 2010 BRFSS. It includes any affirmative answer to "Has a doctor ever told you that you had angina/coronary heart disease/stroke/heart attack?"

Updated by the Virginia Department of Health, Office of Family Health Services, Division of Prevention and Health Promotion, Diabetes Prevention and Control Project on 7/2011. For more information, visit <http://www.vahealth.org/cdpc/diabetes/>.

Diabetes-related hospitalizations & cardiovascular disease

- Of persons with a diabetes diagnosis who were hospitalized in 2009, 38,090 (23.3%), or nearly 1 in 4, had a primary diagnosis of cardiovascular disease.
- Persons with diabetes who are hospitalized are more than two times as likely to have a primary diagnosis of cardiovascular disease as persons without diabetes (23.3% versus 10.5%).
- The majority of diabetes-related hospitalizations also had a diagnosis of cardiovascular disease (88.8%, or 145,176 persons).

Hospital discharges with cardiovascular disease diagnoses by diabetes status, Virginia, 2009

	With diabetes		Without diabetes	
	Number of discharges	% of discharges	Number of discharges	% of discharges
Heart attack	7,548	4.6%	12,866	2.0%
Stroke	19,271	11.8%	33,991	5.1%
Any mention CVD	145,176	88.8%	278,288	42.1%

Source: Virginia Health Information, Inc. Hospital Discharge Dataset, 2009

Data notes: ICD-9 CM codes were as follows: heart attack (410.x); stroke (430.x); CVD (390.x-440.x). Diabetes-related hospitalizations had any diagnosis 250.x.

Persons with any diabetes diagnosis were more than two times as likely as persons without diabetes to also have any diagnosis of

- Heart attack (4.6% vs. 2.0%),
- Stroke (11.8% vs. 5.1%), or
- Any cardiovascular disease (42.1% vs. 88.8%).

Diabetes-related deaths & cardiovascular disease

82.8% of diabetes-related deaths also had cardiovascular disease listed as a primary or contributing cause of death, compared to 46.0% of persons without diabetes. Persons with diabetes are nearly two times as likely to die from CVD as persons without diabetes.

CVD as a primary cause of death: In 2009, 1,517 persons with diabetes died with a primary diagnosis of cardiovascular disease. Cardiovascular disease was the primary cause of death for nearly one third of deaths (32.0%) related to diabetes.

Specifically, among diabetes-related deaths in 2009 with a primary diagnosis of CVD:

- 1,198 (25.2%) diabetes-related deaths had primary cause heart disease,
- 222 (4.7%) diabetes-related deaths had primary cause stroke, and
- 79 (1.7%) diabetes-related deaths had primary cause hypertension.

Among diabetes-related deaths in 2009,

- 59.1% had heart disease as a contributing cause, versus 32.1% of non-diabetes-related deaths
- 12.6% had stroke as a contributing cause, versus 8.6% of non-diabetes-related deaths.
- 36.1% had high blood pressure as a contributing cause, versus 7.5% of non-diabetes-related deaths.

Compared to persons without diabetes, persons with diabetes are

- Nearly two times as likely to die from heart disease,
- 1.5 times as likely to die from a stroke, and
- Five times as likely to die from hypertension.

Diabetes-related deaths with primary or contributing cause cardiovascular disease, Virginia, 2009

	Primary cause CVD	Contributing cause CVD
	Number of deaths	Number of deaths
Heart disease	1,198	2,804
Stroke	222	596
Hypertension	79	1,713
Total CVD- and diabetes-related deaths	1,517	3,928

Source: Virginia Department of Health, Division of Health Statistics, 2009.

Data notes: ICD-10 codes were as follows: heart disease (I00-I09, I11, I13, I20-51); stroke (I60-69); hypertension (I10, I12, I15). Diabetes-related deaths had a contributing cause E10-14.